

Abstract of the Disclosure

Provided are 1) a method for forming a ruthenium film under a single process condition, whereby high adhesion of the ruthenium film to a lower layer is maintained, and 2) a method for manufacturing an metal-insulator-metal (MIM) capacitor using the ruthenium film forming method. The method for forming a ruthenium film includes supplying bis(isoheptane-2,4-dionato)norbornadiene ruthenium at a flow rate of 0.2-1 ccm and oxygen at a flow rate of 20-60 sccm, and depositing the ruthenium film at a temperature of 330-430°C under a pressure of 0.5-5 Torr using chemical vapor deposition (CVD).